## CLAIMS

What is claimed is:

1. A composite leaf spring comprising:

a forward leaf spring segment;

a rearward leaf spring segment; and

a mounting segment intermediate said forward leaf spring segment and said rearward leaf spring segment, said mounting segment defining a continuously variable cross-section shape.

2. The composite leaf spring as recited in claim 1, wherein any cross-section taken perpendicular to the mounting segment and within said mounting segment defines a substantially equivalent cross-sectional area.

3. The composite leaf spring as recited in claim 1, wherein said mounting segment comprising a tapering width and an expanding depth such that any cross-section taken perpendicular to the mounting segment and within said mounting segment provides a singular cross-sectional shape

4. The composite leaf spring as recited in claim 1, wherein said rearward leaf spring segment defines a first arc in a first direction and said forward leaf spring segment defines a second arc in a second direction.

5. The composite leaf spring as recited in claim 1, wherein said forward leaf spring segment is thicker in depth than said rearward leaf spring segment.

6. A suspension system comprising:

a composite leaf spring comprising a forward leaf spring segment, a rearward leaf spring segment, and a mounting segment intermediate said forward leaf spring segment and said rearward leaf spring segment; and

an axle beam attachment system comprising a cavity engageable with said mounting segment at only a single predefined location along said mounting segment.

7. The suspension system as recited in claim 6, wherein said mounting segment comprises a tapering width and an expanding depth such that a cross-sectional taken perpendicular to the mounting segment and within said mounting segment provides a singular cross-sectional shape.

8. The suspension system as recited in claim 6, wherein any cross-section taken perpendicular to the mounting segment and within said mounting segment defines a cross-sectional area equivalent to any other cross-section taken perpendicular to the mounting segment within said mounting segment.

9. The suspension system as recited in claim 6, wherein said axle attachment system comprises a mount attached to said composite leaf spring.

10. The suspension system as recited in claim 9, wherein said mount is an integral portion of said composite leaf spring.

11. The suspension system as recited in claim 9, wherein said mount is overmolded with said composite leaf spring.

12. The suspension system as recited in claim 9, wherein said mount comprises an upper clamp plate and a lower clamp plate, said upper clamp plate defines a first interior cavity and said lower clamp plate defines a second interior cavity, wherein a leaf spring receipt cavity comprised of said first and second cavities corresponds to a leaf spring width and a leaf spring depth for attaching said mount at a single predetermined location along said mounting segment.

13. The suspension system as recited in claim 6, further comprising an upper clamp plate and a lower clamp plate which defines said cavity when mounted together.

14. The suspension system as recited in claim 13, wherein said upper clamp plate and said lower clamp plate sandwich said composite leaf spring.

15. A suspension system comprising:

a composite leaf spring comprising a mounting segment intermediate a forward leaf spring segment and a rearward leaf spring segment; and

an axle beam attachment system which interlocks at a single predetermined location along said mounting segment.

16. The suspension system as recited in claim 15, wherein said mounting segment comprises a tapering width and an expanding depth such that any cross-section taken perpendicular to the mounting segment and within said mounting segment provides a singular cross-sectional shape.

17. The suspension system as recited in claim 15, wherein any cross-section taken perpendicular to the mounting segment and within said mounting segment defines a cross-sectional area equivalent to any other cross-section taken perpendicular to the mounting segment within said mounting segment.

18. The suspension system as recited in claim 15, wherein said axle beam attachment system defines a cavity which surrounds but a singular segment within said mounting segment to interlock said axle beam attachment system with said composite leaf spring.

19. The suspension system as recited in claim 18, further comprising a plurality of plates which define said cavity.

20. The suspension system as recited in claim 19, wherein said plurality of plates are fastened together to define said cavity.

21. The suspension system as recited in claim 19, further comprising an axle beam mounted to at least one of said plurality of plates.

22. A method of mounting an axle beam to a composite leaf spring comprising the steps of:

(1) defining a mounting segment along a composite leaf spring comprising a tapering width and an expanding depth such that any cross-section taken perpendicular to the mounting segment and within the mounting segment provides a singular cross-sectional shape;

(2) mechanically interlocking an axle beam attachment system with a cross-sectional shape at a single predetermined location along the mounting segment; and

(3) mounting an axle beam to the axle beam attachment system.

23. A method as recited in claim 22, wherein step (2) further comprises attaching an upper and lower plate together to define a cavity equivalent to the cross-sectional shape to at least partially surround and mechanically interlock the axle beam attachment system with the composite leaf spring.

24. A method as recited in claim 22, wherein step (2) further comprises overmolding a molded material at the single predetermined location along the mounting segment to interlock the molded material with the leaf spring.